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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,731	05/12/2005	Shigeru Okaniwa	2204-051342	8989

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THE WEBB LAW FIRM, P.C.
700 KOPPERS BUILDING
436 SEVENTH AVENUE
PITTSBURGH, PA 15219

EXAMINER	
MEHTA, MEGHA S	
ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
06/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,731	OKANIWA ET AL.	
	Examiner	Art Unit	
	MEGHA MEHTA	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/8/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) was submitted on 2/8/2008. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the IDS is being considered by the examiner. Please refer to the applicant's copy of the 1449 submitted herewith.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claim 9 is rejected under 35 U.S.C. 102(a) as being anticipated by JP 2002-346770 Makoto et al.

The claim is drawn to a method of welding a sintered aluminum alloy. Makoto teaches the welding of a sintered aluminum alloy in paragraph [0006] of the detailed description. Thus all of the critical elements are well taught and properly included in this rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-346770 Makoto et al in view of US 3,963,449 Seki et al.

The claims are drawn to the method of welding a sintered aluminum alloy described above where the claims further require the sintered pieces to be a composite material with a ceramic particle of a specific diameter. Makoto fails to teach the ceramic particle. However, this modification would have been obvious to one of ordinary skill at the time of the invention when Makoto is taken in view of Seki because Seki teaches a composite material of aluminum alloy and ceramic particles in column 1, lines 4-8 and 19-26. The particle size disclosed by Seki in column 2, lines 63-64 is 1-400 microns. However, if the artisan required or desired smaller particles, he could easily separate the particles of a smaller diameter from the larger ones.

It would have been obvious to one of ordinary skill at the time of the invention to make such a modification because both Makoto and Seki teach aluminum alloy compositions. One would have been motivated to make such a modification because of the improved strength characteristics and resistance to abrasion.

6. Claims 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-346770 Makoto et al in view of US 3,963,449 Seki et al, further in view of US 3,602,682 Hoeffleur.

The claims are drawn to the method of welding a sintered aluminum alloy described above, where the claims further require a welding aid with and without the ceramic particles, being of a specific shape and a specific composition.

In regards to claims 13 and 14, Makoto teaches the sintered pieces friction stir welded together and the aluminum alloy without ceramic particles in paragraph [0006] of the detailed description, but fails to teach the welding aid or aluminum alloy with ceramic particles. However, this becomes obvious when Makoto is taken in view of Seki because Seki teaches the

aluminum alloy with ceramic particles in column 1, line 4-8 and 19-26. Both Makoto and Seki fail to teach the welding aid. But this, too, becomes obvious when Makoto and Seki are taken in view of Hoeffleur because Hoeffleur teaches a welding aid both in between and mounted upon the work pieces in column 1 lines 53-67.

Claims 15 and 17 require the welding aid to have a T- or H- shaped section. This is not taught by Makoto or Seki, but Hoeffleur teaches the welding aid that is both between and mounted on the work pieces in column 1, lines 53-67. These are not the solid T- or H-shaped aids required by the claim; however, the aid used by Hoeffleur has the same functionality as the aids in the instant claim. Therefore, it would have been obvious to one of ordinary skill to use either aid, and it is up to the artisan to choose his preferred welding aid.

Claims 16 and 18 are drawn to the welding aid positioning and composition. As mentioned before, Hoeffleur teaches the aid to be between and mounted upon the work pieces in column 1, lines 53-67. And Seki teaches an aluminum alloy with ceramic particles in column 1, lines 4-8 and 19-26. Makoto, Seki and Hoeffleur all fail to teach the welding aid having different ratios of the ceramic particles in the portions in between and on top of the work pieces. However, this would have been obvious to one of ordinary skill in the art and is dependent on the desired final product. The artisan may choose to change the composition of the welding aid for the portion in between the work pieces to from that on top of them.

It would have been obvious to one of ordinary skill in the art to combine Makoto and Hoeffleur because both teach the welding of work pieces. One would have been motivated to make this modification because of the improved quality of the product when a welding aid is used.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-346770 Makoto et al. as applied to claim 9 above, and further in view of US 5,794,835 Colligan et al.

Claim 12 is drawn to the method of welding a sintered aluminum alloy described above where the claim further requires the welding tool to have specific measurements. This is not taught by Makoto. However, it would have been obvious to one of ordinary skill to make these modifications when Makoto is taken in view of Colligan because Colligan teaches the lengths and speeds required in column 5, lines 19-21 and column 6, lines 41-43. Colligan even teaches a "contact zone" of the shoulder and the work piece, implying a 0mm depth of the tool.

Colligan fails to teach the shoulder radius. However, minor variations such as the lengths and dimensions of the tool can be easily modified by one of ordinary skill in the art. It does not change the functionality of the tool.

It would have been obvious to make these modifications because both Makoto and Colligan teach friction stir welding. One would have been motivated to make these modifications because of the improved quality of the weld that such speeds and dimensions afford as explained by Colligan in column 5, lines 24-28.

Response to Arguments

8. Applicant's arguments filed 4/28/2008 have been fully considered but they are not persuasive. Applicant argues that the reference used for the 102 rejection is not a valid reference due to the publication date. However, the Examiner is aware that the publication date of Makoto is December 4, 2002. The reference is valid because the priority date of the instant application is November 13, 2003, not 2002. The priority has not been perfected to the 2002 date because a certified translation of the original document has not been filed. Therefore, the application

receives the November 13, 2003, priority date. Makoto was published December 4, 2002, less than one year before the priority date, making Makoto a 102(a) reference, as shown in the 35 U.S.C. 102 section of the non-final office action.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGHA MEHTA whose telephone number is (571)270-3598. The examiner can normally be reached on Monday to Friday 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry A Lorengo/
Supervisory Patent Examiner, Art Unit 1793

/Megha Mehta/
Examiner, Art Unit 1793